

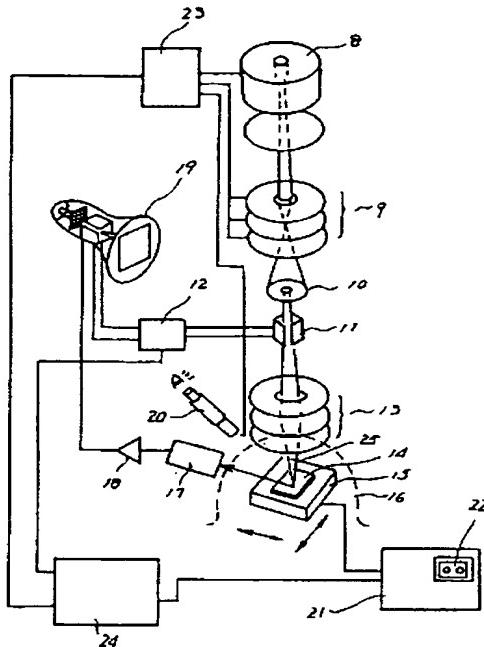
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- APPLICANT : HITACHI LTD;
- INVENTOR : MITANI MASAO;
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- TITLE : PROCESSING APPARATUS BY ION BEAM



ABSTRACT : PURPOSE: To minutely process a defect existing in a mask for manufacturing LSI, with reduced damage, by restricting an ion beam by means of an electrostatic lens and by scanning the same by means of a deflecting electrode.

CONSTITUTION: An ion beam 25 emitted from an ion gun 8 is restricted by an electrostatic lens 9, made to pass through an objective stop 10, deflected by a deflecting electrode 11, converged by an objective lens 13, and applied onto a photomask 14 which is covered with a shield electrode 16 set on an XY table 15. A secondary charged particle springing out of the photomask 14 is caught by a detector 17, the signal thereof is amplified by an amplifier 18, and the surface state of a defective portion of the photomask 14 is displayed on a screen of CRT 19. This surface state can be observed also by an optical microscope 20. The intensity of the beam and the time of its application which are necessary are set in accordance with the kind of a defect, and scanning is made by the ion beam 25 for modification.

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